



## TECHNICAL NOTE

### TOPIC: DC Disconnect UL Listing Update

#### SUMMARY

The UL Listing for the SMA DC disconnect used with SMA Sunny Boy inverters has recently been updated. Effective April 21st, 2009, the new maximum fuse rating will be 20 A<sub>DC</sub>. The SMA DC disconnect will continue to be shipped with 15 A<sub>DC</sub>, 600 V<sub>DC</sub> rated fuses as standard.

UL required no redesign for this update. Therefore, units that were manufactured prior to the effective date will bear the original ratings label. Please use this document if needed of proof of this change until such time as new units with updated labels are available.

#### STRING FUSE SIZING REVIEW

In any electrical system, fuses are used to protect wiring and equipment from excessive currents that can cause damage, heating or in extreme cases even fire. If the fuse rating is too small it could open during normal operation. If the fuse rating is too large, it cannot provide the needed protection. In PV systems, the minimum and maximum size of the series fuse is determined by the electrical ratings of the PV module as well as by UL and National Electrical Code (NEC) requirements. Be sure to consult with your PV module manufacturer for appropriate PV string fuse ratings.

The minimum size of fuses and wiring are calculated using the Short Circuit Current Rating ( $I_{SC}$ ) of the PV module. The NEC requires that all fuses and wiring be sized for a minimum of 1.56 times the  $I_{SC}$  of the PV module used in the system. The proper size PV string fuse is determined by calculating  $1.56 \times I_{SC}$  (of the PV module) and then rounding up to the next standard fuse size.

If there are additional questions or if further clarification is needed, please refer to the inverter manual or contact technical support at SMA America, Inc.

SMA America, Inc.  
4031 Alvis Court  
Rocklin, CA 95677  
+1 916 625 0870  
Service@SMA-America.com